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ABSTRACT

A project was undertaken to evaluate and revise Florida's existing instructional materials for use in courses in heavy duty truck and bus mechanics. The tasks addressed in the currently available student guides were compared to the state program standards. After identifying tasks that were implied in the state standards but not covered in the guides, project staff revised the student modules. These and other untested modules were then field-tested and revised a second time. Strategies for disseminating the new materials were developed. (Appendixes to this report include the Vocational Instructional Materials Acquisition System [VIMAS] model, program standards, evaluation forms used in the field test, a student learning guide format, an annotation review form, and a program task listing.) (MN)

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FINAL REPORT

Project No. LEA 4-2G11

From November 10, 1983 to October 31, 1984

Heavy Duty Truck and Bus Mechanics

Instructional Materials Acquisition Project Continuation

Florida Department of Education

Division of Vocational, Adult, and Community Education

Tallahassee, Florida 32301

CE 042803

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Final Report

Project No. LEA 4-2G11

From November 10, 1983 to October 31, 1984

Heavy Duty Truck and Bus Mechanics

Instructional Materials Acquisition Project Continuation

School Board of Pinellas County, Florida
1960 Druid Road
Clearwater, Florida 33516

John Oldfield
Local Project Coordinator

Dorothy Bailey
Project Director

The project reported herein was conducted pursuant to a grant from the Division of Vocational, Adult, and Community Education, Florida Department of Education. Contractors undertaking such projects are encouraged to express freely their professional judgments in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent the official position or policy of the Florida Department of Education.

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ACKNOWLEDGMENTS

The Heavy Duty Truck and Bus Project Committee appreciates the time and effort of Ms. Lisa Beverly Harden of Ridge Vo-Tech for assisting the committee in its revision activities and for hosting the writing workshop.

Mr. Phillip V. (Pete) LeForge was the editor of the project materials and his expertise was greatly appreciated. Dr. Ronald Laugen and Mr. Shahrokh Massoudi provided technical assistance to the project committee and to the production of the bibliography. Their special efforts are appreciated.

The Project Manager, Dr. Marvin Patterson assisted the committee and the local education agency in completing this project and special appreciation is extended for his excellent guidance.

The enthusiasm and expertise of committee members listed below contributed to the success of this project. Committee members were:

John Oldfield
Pinellas Vo-Tech Inst.
Clearwater, FL

John Stuke
Florida Jr. College
Jacksonville, FL

John Edwards
Pinellas Vo-Tech Inst.
Clearwater, FL

Gene Vecchione
Miami Lakes Tech. Ed. Center
Miami Lakes, FL

Vernon Van Sickle
Mid-Florida Vo-Tech Inst.
Orlando, FL

ABSTRACT OF THE FINAL REPORT

Title of Project:	**Heavy Duty Truck and Bus Mechanics Instructional Materials Acquisition Project Continuation**
Organization:	**Pinellas County Schools**
Project Director:	**Dorothy Bailey**
VIMAS Project Manager:	**Marvin D. Patterson**
Contract Amount:	**$8,453**
Duration of Project:	**November 10, 1983 - October 31, 1984**
Project Number:	**LEA 4-2G11**

Objectives:

1. **To analyze the state program standards and compare them with the list of student guides available from Ridge Vocational Technical Center.**
2. **To identify tasks not covered in the Ridge Guides that are implied in the state standards and to develop guides or adapt modules from other sources into the Ridge format so as to satisfy the state standards.**
3. **To review instructional materials for inclusion and referencing in the student guides.**
4. **To conduct a field trial of all adapted or new Student Learning Guides that have not undergone field testing through the normal Ridge development process.**
5. **To revise Student Learning Guides field tested by committee members for subsequent production and dissemination.**
6. **To recommend to the Division of Vocational, Adult, and Community Education (DVACE) any necessary inservicing of supervisors and teachers, and possible dissemination/diffusion strategies.**
7. **To submit a final report.**

Procedures:

1. **Identified tasks that are required in order to meet state standards.**
2. **Adapted modules from other sources, such as the 916 School District in Minnesota, into the Ridge format for Student Learning Guides.**
3. **Developed Learning Guides as necessary to complete the instructional package.**
4. **Field tested adapted or developed guides at local sites.**

5. Analyzed the results of the field trials and revised the learning guides as needed.

6. Made recommendations for the dissemination/diffusion plan for the final products.

Expected Contribution or Potential Impact on Vocational Education:

The competency-based instructional materials recommended for acquisition should improve the quality of materials used in vocational education and thereby improve student performance on the job.

Products to be Delivered:

A set of competency-based student materials were recommended to the DVACE for the target population.

INTRODUCTION

Background

This instructional materials acquisition project was part of a system for providing competency-based instructional materials for vocational education classrooms in Florida. The Florida Division of Vocational, Adult, and Community Education, as part of its commitment to competency-based education, has sponsored a number of similar projects in high priority programs. Liaison between the Division and project committees has been provided by project managers from the Florida State University Center for Studies in Vocational Education (CSVE). The individual projects, together with the services provided by CSVE, comprise the Vocational Instructional Materials Acquisition System (VIMAS). The system is described in Appendix A.

Statement of Need

The Division of Vocational, Adult, and Community Education (DVACE) selected Heavy Duty Truck and Bus Mechanics as a priority program course for a VIMAS project in FY 1983. (See Appendix B for program description.) The state program director and the regional consultants in Industrial Education determined that the Heavy Duty Truck and Bus program has a high priority need for instructional materials. Through their contacts with programs and teachers within the state, they found a lack of materials covering the content area of the program. In 1980, the Instructional Materials Assessment Survey (IMAS) showed a high need for instructional materials in the program.

Purpose

The purpose of this continuation project was to provide competency-based instructional and/or curricular materials for students and instructors in three program areas: Heavy Duty Truck and Bus Mechanics, Diesel Engine Mechanics and Heavy Equipment Mechanics.

Project Objectives

1. To analyze the state program standards and compare them with the list of student guides available from Ridge Vocational Technical Center.

2. To identify tasks not covered in the Ridge guides that are implied in the state standards and to develop guides or adapt modules from other sources into the Ridge format so as to satisfy the state standards.

3. To review the instructional materials for inclusion and referencing in the student guides.

4. To conduct a field trial of all adapted or new Student Learning Guides that have not undergone field testing through the normal Ridge development process.

5. To revise Student Learning Guides field tested by the committee members for subsequent production and dissemination.

6. To recommend to the Division of Vocational, Adult, and Community Education (DVACE) necessary inservicing of supervisors and teachers, and possible dissemination/diffusion strategies.

7. To submit to the DVACE a final report, including a selective bibliography of materials reviewed by the committee.

Target Population

The target population consisted of approximately 2,420 students and 100 teachers in the following industrial programs in Florida: Heavy Duty Truck and Bus Mechanics (9123), Diesel Engine Mechanics (9243), and Heavy Equipment Mechanics (9503).

METHODS AND PROCEDURES

Following the funding of this project, the VIMAS project manager arranged for the committee members to continue to serve on the committee. The committee members are listed in Appendix C.

To expedite the field trial of new learning guides the VIMAS Project Manager developed procedures and evaluation forms to be used by project teachers in testing the adapted materials. (See Appendix D.)

During the adaptation process committee members reviewed Ridge learning guides for adoption or adaptation. The guides were adapted to meet state standards. When no guides existed for identified standards, new guides were written. These new guides were forwarded to the Project Manager for typing and field testing. Previously developed and tested guides were revised based on field trial results, edited and word processed by CSVE personnel and prepared for final production.

The basic Ridge format was modified for statewide use. The format for the various pages is provided in Appendix E.

The project committee met at Ridge Vo-Tech for a week in March 1984. Purpose of the meeting was to review the results of field tryouts, determine revisions to be made, review edited guides, and revise writing assignments of committee members.

Adaptation, writing, and editing continued throughout FY-1984. Also during this period other instructional materials were reviewed for inclusion in the bibliography. Annotation Review Forms were completed by committee members and a graduate project assistant. A sample form is provided in Appendix F. Florida's Educational Information Service (FEIS) provided staff to verify availability of materials and to provide details for bibliography citations.

ACCOMPLISHMENT OF PROJECT OBJECTIVES

The objectives for the project are listed in this section with documentary evidence cited to support the conclusion that the Heavy Duty Truck and Bus Mechanics Instructional Materials Acquisition Continuation Project accomplished its objectives.

The objectives were:

1. To analyze the state program standards and compare them with the list of student guides available from Ridge Vocational Technical Center.

   The state program standards for Heavy Duty Truck and Bus Mechanics were compared to the guides available at Ridge. Where gaps existed new tasks were identified and compiled into a revised list of tasks. This list was used as the basis from which guides were revised or adapted. The list of these tasks are provided in Appendix G.

2. To identify tasks not covered in the Ridge Guides that are implied in the state standards and to develop guides or adapt modules from other sources into the Ridge format so as to satisfy the state standards.

   The final list of tasks is provided in Appendix G. Adaptation and/or development of guides based on the list of tasks proceeded throughout the duration of the project.

3. To review instructional materials for inclusion and referencing in the student guides.

   Committee members based the review process on the identified needs, criteria for competency-based instructional materials, and the program description (standards). The recommended materials were screened for bias as required by the DVACE.

4. To conduct a field trial of all adapted or new Student Learning Guides that have not undergone field testing through the normal Ridge development process.

   Field trials of learning guides did occur during the project. However, extensive field testing of guides turned out to be impractical.

5. To revise Student Learning Guides field tested by committee members for subsequent production and dissemination.

   A total of 93 student learning guides or all the guides for a First Year Program were submitted by the Project Committee for production at the Center for Studies in Vocational Education. Many of the guides in the Second Year were completed and submitted to production by the Committee. A number of the guides listed in the second year were still to be completed by Ridge instructors at the time of this report.

6. To recommend to the Dissemination/Diffusion Section of the DVACE necessary inservicing of supervisors and teachers, and possible dissemination/diffusion strategies.

The recommendations from the previous project are still valid and are summarized in the Recommendations section. The diffusion/dissemination plan developed for the project is available for review in the Bureau of Research, Evaluation, and Dissemination.

7. To submit to the DVACE a final report.

This document is the final report for the project.

RECOMMENDATIONS

Briefly, the Project Committee recommendations developed in 1983 are still valid; these were:

*(1) the production of Ridge Learning Guides that were developed and field tested by Ridge staff;

*(2) the adaptation of selected modules from the 916 School District (Minnesota) to satisfy state standards;

(3) the development of a competency profile folder;

*(4) the production of a bibliography;

*(5) the purchase of Safety Practices in Auto, Diesel, and Agricultural Machine Shops from Kansas Vocational Curriculum Center (student and teacher guides);

*(6) the purchase of Employability Skills Series from Florida D.O.E.;

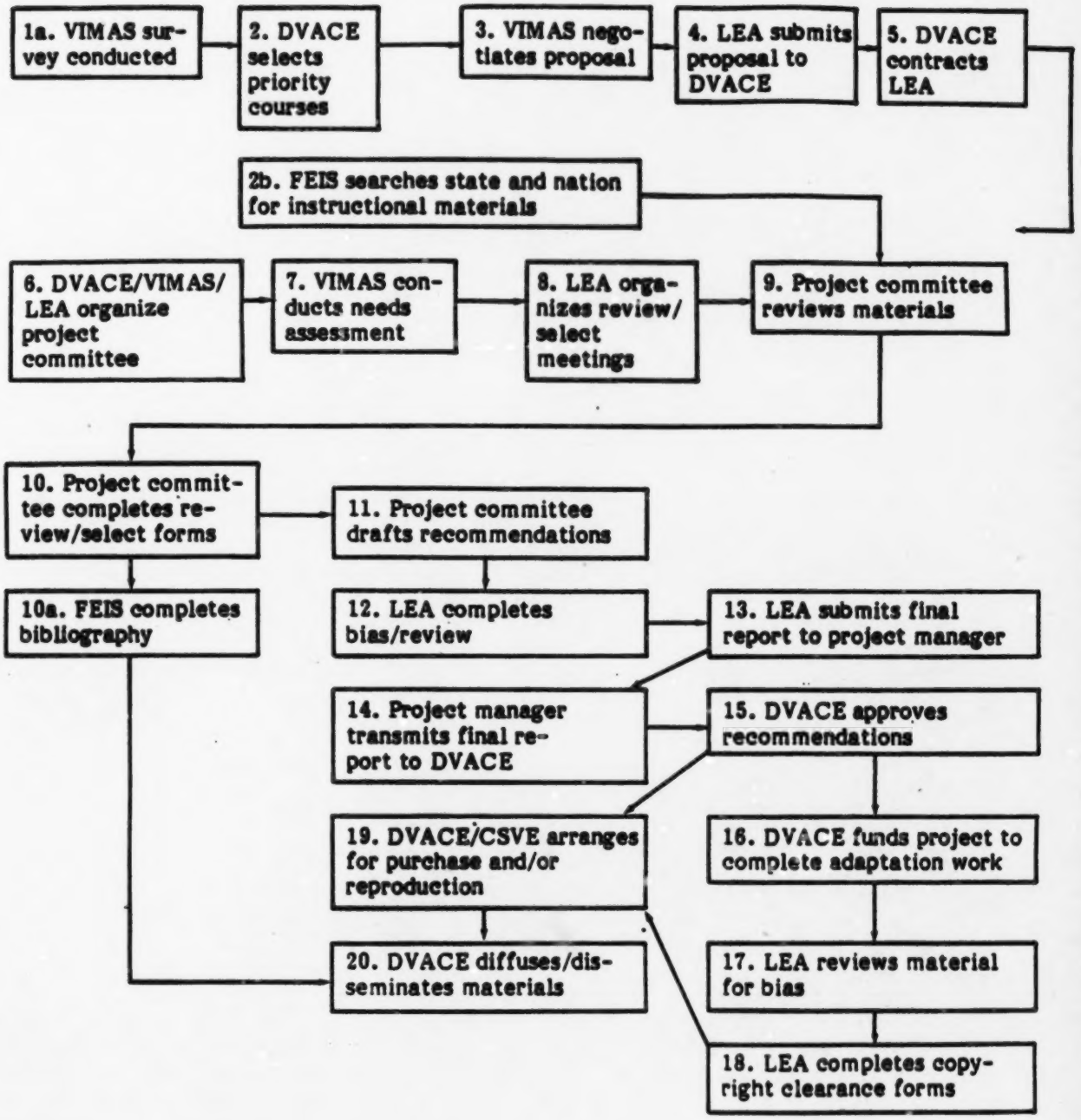
*(7) the acquisition of the free publication: Standards for Vocational Truck Tractor Trailer Service Instruction;

*(8) the consideration of inservice plan for teachers.

*NOTE: The recommendations shown with an asterick have already been implemented. The development of a competency profile folder will be considered if and when the guides for the 2nd year phase are produced.

APPENDICES

APPENDIX A
Vocational Instructional Materials Acquisition System (VIMAS) Project Model


1a. VIMAS survey conducted
2. DVACE selects priority courses
3. VIMAS negotiates proposal
4. LEA submits proposal to DVACE
5. DVACE contracts LEA
2b. FEIS searches state and nation for instructional materials
6. DVACE/VIMAS/ LEA organize project committee
7. VIMAS conducts needs assessment
8. LEA organizes review/ select meetings
9. Project committee reviews materials
10. Project committee completes review/select forms
11. Project committee drafts recommendations
10a. FEIS completes bibliography
12. LEA completes bias/review
13. LEA submits final report to project manager
14. Project manager transmits final report to DVACE
15. DVACE approves recommendations
19. DVACE/CSVE arranges for purchase and/or reproduction
16. DVACE funds project to complete adaptation work
20. DVACE diffuses/disseminates materials
17. LEA reviews material for bias
18. LEA completes copyright clearance forms

Legend:

IMAS:	Instructional Materials Assessment Survey
DVACE:	Division of Vocational, Adult, and Community Education
VIMAS:	Vocational Instructional Materials Acquisition System
FEIS:	Florida Educational Information Service
CSVE:	Center for Studies in Vocational Education

APPENDIX B
Program Description (Standards)

PROGRAM AREA: Industrial Education

PROGRAM TITLE: Heavy Duty Truck and Bus Mechanics

SCHOOL DISTRICT PROGRAM NUMBER: 9123

COMMUNITY COLLEGE PROGRAM NUMBER: IN 47.060501

PROGRAM DESCRIPTION: The program is designed to prepare a person for initial employment as a Bus Inspector, Diesel Mechanic, Tractor Mechanic or to provide supplemental training for a person previously or currently employed in these occupations. It may also serve as preapprenticeship or apprenticeship related instruction.

PROGRAM CONTENT: Instruction is designed to enable the individual to achieve instructional objectives in the following content areas:

A. Communication skills
B. Leadership skills
C. Human relations and employability skills
D. Safe and efficient work practices
E. Diesel engine maintenance, repair, and rebuilding
F. Machine tool use
G. Diagnose and perform pre-remaintenance tests
H. Maintain and service cylinder heads
I. Service diesel fuel systems and turbo-charging systems
J. Maintain and service flywheel and clutch
K. Maintain and service cooling system
L. Maintain and adjust governors and other controls
M. Maintain and service hydraulic and pneumatic systems and components
N. Maintain lubrication systems
O. Weld and Braze
P. Diagnosis of mechanical failure
Q. Use of diagnostic and test equipment
R. Performance testing
S. Electrical systems
T. Air conditioning and heating
U. Fabrication of parts
V. Power transfer systems including automatic and manual transmissions
W. Front end and frame alignment
X. Suspension
Y. Use of hand tools, power tools, and equipment
Z. Use and care of materials
AA. Use of current industry standards, practices, and techniques

The Vocational Industrial Clubs of America, Inc., is an appropriate vocational student organization for providing leadership training experiences and for reinforcing specific vocational skills. When provided, these activities are considered an integral part of this instructional program.

The cooperative method of instruction is appropriate for this program. Whenever the cooperative method is offered, the following is required for each student: a training plan which includes instructional objectives and a list of on-the-job and in-school learning experiences; a work station which reflects equipment, skills, and tasks relevant to the occupation the student has chosen as a career goal.

The typical length of this program for the average achieving student is 1620 hours.

APPENDIX C
Project Committee

1983 - 1984

HEAVY DUTY TRUCK & BUS MECHANICS

PROJECT COMMITTEE/PERSONNEL

LOCAL PROJECT COORDINAOR ..... Mr. John Oldfield
Pinellas Vocational Technical Institute
6100 154th Avenue, North
Clearwater, FL 33520-2194
(813) 531-3531

PROJECT DIRECTOR ..... Ms. Dorothy Bailey
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REGION III
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(Mid-Florida Vocational Technical Institute)
3659 Timber Trail
Orlando, FL 32808
(305) 299-5524 (Office)
(305) 293-6696 (Residence)
(305) 855-5880 (School)

REGION IV
REPRESENTATIVE ..... Mr. John Edwards
Pinellas Vocational Technical Institute
6100 154th Avenue, North
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(813) 531-3531

REGION V
REPRESENTATIVE ..... Mr. Eugene Vecchione
Miami Lakes Technical Education Center
5780 Northwest 158th Street
Miami Lakes, FL 33014
(305) 557-1100 ext. 119

APPENDIX D
Evaluation Forms for Field Test

STUDENT EVALUATION FORM FOR HEAVY DUTY TRUCK AND BUS LEARNING GUIDES

Instructions: The Learning Guide writers need your help to find out what changes should be made in each Guide before they are used by other students like you.

Please answer all questions below completely and honestly. If there are questions you do not understand, check with your teacher before going on.

Don't spend too much time thinking about each item. Your first thoughts are probably your best answers. Remember that there are no right or wrong answers to most of these questions—only your reactions and feelings.

For questions 4-12, circle either YES, NO, or NA for Not Applicable.

---

1. What is your name? _____

2. Tell below which Learning Guide you tried out.

   a. The Duty letter is _____.

   b. The Task number is _____.

3. What were the total clock-hours you spent on the Guide? _____

4. Were the Objectives worded clearly enough for you to understand what it was you were to do? YES NO

5. Were the Learning Activities adequate enough for you to learn how to do the objectives? YES NO

6. Did the Knowledge Test cover only material taught in the learning activities? YES NO

7. Were the Self-Checks helpful? YES NO NA

8. Did the Instruction Sheets repeat information found found in books you use? YES NO NA

9. Was the reading level of the Guide difficult? YES NO

10. Did the Guide provide for enough opportunity to practice the task? YES NO NA

11. Was the Performance Test fair? YES NO NA

12. Were the drawings printed in the Learning Guide clear enough and detailed enough? YES NO NA

13. Did you enjoy learning this topic by using a Learning Guide? YES NO

If you answered NO to any of the above questions, turn the page over and continue answering the questions shown there.

14. What objectives would you like to see rewritten? Why?

15. Which learning activities would you like to see changed? Why?

16. Which items on the Performance Check would you like to see changed?

17. Which test items would you like to see changed?

18. What else needs to be changed in the Learning Guide?

19. What is your main complaint about using this Learning Guide?

If possible, attach a copy of the Learning Guide you tried out with your comments written next to the places where you had trouble.

Thank you for your help!

TEACHER EVALUATION FORM FOR HEAVY DUTY TRUCK AND BUS LEARNING GUIDES

INSTRUCTIONS TO TEACHER: Please complete a separate evaluation form for each Learning Guide you field test. Then staple the form to the Learning Guide. Throughout the Learning Guide pages, write your comments and suggestions for revisions.

1. What is your name? _____

2. Tell below which Learning Guide you tried out.

   a. The Duty letter is _____.

   b. The Task number is _____.

3. What should be changed in this Learning Guide?

4. How does the performance of students using this Learning Guide compare to the performance of students not using this Guide?

   a. How did lower ability students do?

   b. How did average ability students do?

   c. How did above average ability students do?

Circle either YES, NO, or NA (Not Applicable) in response to each of the following questions.

5.	Was the Introduction a good statement of purpose for the Learning Guide?	YES	NO	NA
6.	Were the Objectives well-stated and clear?	YES	NO	NA
7.	Were all Learning Activities easy to understand by most of the students?	YES	NO	NA
8.	Did the Learning Activities actually teach the task and objectives?	YES	NO	NA

9. Were the Instruction Sheets necessary and helpful?	YES	NO	NA
10. Was the reading level of the Guide appropriate for the students you have?	YES	NO	NA
11. Were items on the Knowledge Test appropriate for the task and objectives?	YES	NO	NA
12. Did the Performance Test measure the attainment of the task?	YES	NO	NA

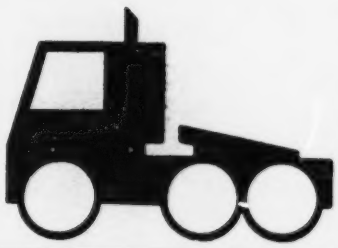
Please circle difficult words in the Learning Guide and handwrite your suggestions for revisions directly in the Guide where problems are present.

Staple this form to the Learning Guide.

Thank you for your help!

APPENDIX E
Student Learning Guide Format

STUDENT LEARNING GUIDE



DUTY | TASK | PREREQ. | DEPT. | PROG.

REVISED

PROGRAM: _____

DUTY: ☐ _____

TASK: ☐ ☐ _____

INTRODUCTION:

PLEASE DO NOT WRITE IN THIS LEARNING GUIDE.

OBJECTIVES

DUTY | TASK | DEPT. | PROG.

PERFORMANCE OBJECTIVE

GIVEN:

YOU WILL:

HOW WELL:

ENABLING OBJECTIVES:

LEARNING ACTIVITIES FOR ENABLING OBJECTIVE ☐ number

DUTY | TASK | EN OBJ | DEPT | PROG

ENABLING OBJECTIVE:

PROCEDURE	
LEARNING ACTIVITIES	RESOURCES

LEARNING ACTIVITIES FOR ENABLING OBJECTIVE ☐ number

CONTINUED

DUTY | TASK | EN. OBJ. | DEPT. | PROG.

PROCEDURE	
LEARNING ACTIVITIES	RESOURCES

PAGE_____ OF_____

INSTRUCTION SHEET FOR ENABLING OBJECTIVE ☐ number

DUTY | TASK | EN. OBJ. | DEPT. | PROG.

DUTY	TASK	EN. OBJ.	DEPT.	PROG.

SELF-CHECK FOR ENABLING OBJECTIVE ☐ number ☐

DUTY | TASK | EN. OBJ. | DEPT. | PROG.

DIRECTIONS:

SELF-CHECK FOR ENABLING OBJECTIVE ☐ number

☐ CONTINUED

DUTY | TASK | EN. OBJ. | DEPT. | PROG.

SELF-CHECK ANSWER KEY FOR ENABLING OBJECTIVE ☐ number

☐

DUTY | TASK | EN. OBJ. | DEPT. | PROG.

PERFORMANCE TEST

DUTY	TASK	ATTEMPT	STUDENT	DATE	☐ Attained ☐ Not Attained	EVALUATOR	PROG	UNIT

DIRECTIONS:

PERFORMANCE CHECKLIST

ALL ITEMS MUST BE MARKED YES FOR ATTAINMENT.

	YES	NO

PERFORMANCE TEST

CONTINUED

PERFORMANCE CHECKLIST ALL ITEMS MUST BE MARKED YES FOR ATTAINMENT.	YES	NO

DUTY | TASK | ATTEMPT | STUDENT | DATE | ☐ Attained ☐ Not Attained | EVALUATOR | LEPT | PRX G

LIST OF RESOURCES

DUTY	TASK	DEPT.	PROG

KNOWLEDGE TEST

DUTY | TASK | DEPT. | PROG.

TASK:

DIRECTIONS:

DUTY | TASK | DEPT. | PROG.

KNOWLEDGE TEST ANSWER KEY

DUTY	TASK	DEPT	PROG

1.____	21.____	41.____	61.____	81.____
2.____	22.____	42.____	62.____	82.____
3.____	23.____	43.____	63.____	83.____
4.____	24.____	44.____	64.____	84.____
5.____	25.____	45.____	65.____	85.____
6.____	26.____	46.____	66.____	86.____
7.____	27.____	47.____	67.____	87.____
8.____	28.____	48.____	68.____	88.____
9.____	29.____	49.____	69.____	89.____
10.____	30.____	50.____	70.____	90.____
11.____	31.____	51.____	71.____	91.____
12.____	32.____	52.____	72.____	92.____
13.____	33.____	53.____	73.____	93.____
14.____	34.____	54.____	74.____	94.____
15.____	35.____	55.____	75.____	95.____
16.____	36.____	56.____	76.____	96.____
17.____	37.____	57.____	77.____	97.____
18.____	38.____	58.____	78.____	98.____
19.____	39.____	59.____	79.____	99.____
20.____	40.____	60.____	80.____	100.____

APPENDIX F
Annotation Review Form

Content Specialist _____ Telephone _____

Date _____

ANNOTATION REVIEW FORM

Bibliographies prepared by the Center for Studies in Vocational Education have a standardized format, and the information requested on this form reflects that format. Two sample entries from published bibliographies are shown on p. 5. Examine these entries before you begin to fill in the form, and refer to them whenever necessary.

Citation and Contents

- The basic citation—title, author, publisher, etc.— will be supplied by an information researcher and may be attached to this form, but write below the title of the material you are reviewing.

_____

- Also attach to this form a photocopy of the title page and the table of contents.

Audience (AD)

- Place a check before the audience or audiences for whom the materials are intended. For example, if you are reviewing materials that include both a text and a teacher's guide, you would check both Students and Teachers/Trainers. If the materials would be useful to other audiences, check those audiences as well. For example, a textbook about interviewing techniques might be useful to employers. You would check both Students and Employers.

1.
- ____ Advisory Committees
- ____ Business
- ____ Counselors
- ____ Ed. Administrators
- ____ Employers
- ____ General Public
- ____ Government Officials
- ____ Handicapped Persons
- ____ Legislators
- ____ Noninstructional Staff
- ____ Parents
- ____ Professionals
- ____ Students
- ____ Teacher Educators
- ____ Teachers/Trainers
- ____ Disadvantaged Persons

Grade Level (GL) and Reading Level

- Place a check before all grade levels for which the materials are relevant. Then in parentheses indicate whether the degree of difficulty is easy, average, or difficult. For example,

✓ High School (difficult)
✓ AVTC (average)

2.
- ____ Pre-School
- ____ Elementary
- ____ Middle School
- ____ Junior High School
- ____ High School
- ____ AVTC
- ____ Community College
- ____ University
- ____ Adult

3. Publisher's estimated reading level (if supplied): _____

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Format (FO)

• The format section of a CSVE bibliography (see p. 5) indicates the separate items available for a particular title (for example, slides and a textbook) and their prices. It also lists page counts for printed materials and running times for films. Place a check before the formats of the materials you are reviewing and supply the prices, pages, etc. Write in any other information as needed; for example, you may need to indicate that an item is free or that several items are priced as a set.

4. ____ Audiotapes , $____
____ Charts, $____
____ Collections, ____ pp., $____
____ Computer Software, $____
____ Dissertations/Theses, ____ pp., $____
____ 8mm films, ____ min., ____ color, ____ sound, $____, rental $____
____ 16mm films, ____ min., ____ color, ____ sound, $____, rental $____
____ Filmstrips, $____
____ Games/Simulations, $____
____ Guides, ____ pp., $____
____ Job Sheets, ____ pp., $____
____ Journal Article, ____ pp.
____ Journals, ____ # issues per year, $____
____ Microfiche, ____ pp., $____
____ Models, $____
____ Modules/LAPs, ____ pp., $____
____ Multimedia Kits, $____
____ Performance Checklists, ____ pp., $____
____ Phonograph Records, $____
____ Posters, $____
____ Realia, $____
____ Reference Materials, ____ pp., $____
____ Reports, ____ pp., $____
____ Slides, $____
____ Slidetapes, $____
____ Statistical Data, ____ pp., $____
____ Study Guides/Workbooks, ____ pp., $____
____ Surveys/Questionnaires, ____ pp., $____
____ Tasks/Objectives/Competencies, ____ pp., $____
____ Tests/Evaluation Instruments, ____ pp., $____
____ Teacher Guides, ____ pp., $____
____ Texts, ____ pp., $____
____ Transparencies, ____ pp., $____
____ Videodiscs, ____ min., ____ color, ____ sound, $____, rental $____
____ Videotapes, ____ min., ____ color, ____ sound, $____, rental $____

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Additional Titles in the Same Series or Set (NT)

- All titles are to be listed here, but the format code information for such titles should be listed in 4.

5. _____

_____

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Annotation

- WRITE COMPLETE SENTENCES.

- Do not repeat information given elsewhere on this form unless you want to emphasize it or comment on it (format, for example).

- Avoid broad generalizations ("The organization is poor"). Instead, be specific ("Students are given activities before being told of their purpose").

6. Content

   a. Give a brief but comprehensive description of the subject matter; a reader must know exactly what the material is about. (See the sample entries.)

   _____

   _____

   _____

   _____

   _____

   b. Further describe the content in terms of currency (is it out of date?), organization (is it clear and logical or hard to follow?), accuracy, and style (will the presentation be effective for the audience?).

   _____

   _____

   _____

   _____

   _____

c. Describe any biases (gender, race, class).

7. Instructional Characteristics

a. Describe the significant instructional management characteristics (if any). Consider overall design (individualized, self-paced, competency-based?) and individual features (objectives, tasks, performance checklists, tests, etc.?).

b. Describe the level of difficulty and the necessity for prerequisites (introductory, advanced, appropriate for what type of audience?). Describe necessary equipment if it is unusual or extensive.

c. Describe any other significant features that have not been covered in the format description or in 7.a. above: illustrations (type, effectiveness?), glossaries, references, appendices.

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SERIES: **The Confidence Game (1977)**

TITLE: ***The First Step***

Keeping Your Balance

Walking the Wire

PUBLISHER: Educational Resources Foundation
2712 Millwood Avenue
Drawer L
Columbia, SC 29250
(803) 648-6822

ANNOTATION: Three films (or videotapes) are the core of this program to improve communications, cooperation, and productivity in the office. Planned for 1 day or three 2-hour seminars, the program also includes participant workbooks, a leader's guide, and audiotapes. *The First Step* shows how human problems and communications can inhibit organizational effectiveness. *Keeping Your Balance* demonstrates how things can go wrong when you think everything is under control. *Walking the Wire* shows how an organization's effectiveness is determined by each employee's contribution. The leader's guide gives introductions to topics, objectives, guides for leading sessions, and an evaluation form. The student workbook provides scripts and activities to stimulate thinking and discussion.

FORMAT Audiotapes. free with purchase or rental. 16mm Films or Videotapes. 20 min. each. color. sound. purchase $1500 a set. rental $375 a set. preview $30 a set. Study Guides/Workbooks. 102 pp. free with purchase or rental. Teacher Guide. 133 pp., free with purchase or rental

AUDIENCE: Students; Teachers/Trainers

GRADE LEVEL: High School; AVTC; Community College; University

TITLE: ***Making Decisions Work*** **(1977)**

SERIES: **Career Core Competencies**

AUTHOR: Woograff, Patrick J., Lynn, James J., Herr, Edwin L.

PUBLISHER: Gregg McGraw-Hill Book Company
P.O. Box 986
Norcross, GA 30091
(404) 449-1839

ANNOTATION: This text promotes awareness that factors within the self are involved in the decision-making process. It emphasizes that decision making, as a process involving thought and information from various sources, is a systematic series of steps rather than a static event and, therefore, subject to reevaluation as new information becomes available. Skills in career decision making are developed. Content includes behavioral goals, theory, case studies, practical advice, and information in addition to hands-on experience through exercises and projects. The teacher's manual provides teaching and grading strategies, answers to activities, tests, and keys.

FORMAT Teacher Guide. 12 pp., $2.75. Text. 136 pp. $5.04

AUDIENCE: Students; Teachers/Trainers

GRADE LEVEL: High School; AVTC

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APPENDIX G
Program Task Listing

PROGRAM TASK LISTING

First Year

Task	Hours	Heavy Duty Truck and Bus Mechanics
A		**PARTICIPATING IN CBVE SHOP PROCEDURES**
01	7	Identify CBVE Terms and Procedures
02	3	Practice Good Work Habits, Attitudes, and Other Employability Skills
03	4	Identify Shop Safety Practices
04	7	Identify Hand Tools and Demonstrate Their Uses, Part 1
05	7	Identify Hand Tools and Demonstrate Their Uses, Part 2
06	9	Identify Precision Tools and Demonstrate Their Uses
07	8	Measure Using Alternative Precision Tools
08	4	Make Precision Measurements Using the Micrometer
09	4	Identify and Operate Power Tools
10	4	Identify Various Types of Automotive Fasteners and Explain Their Uses
11	25	Perform Shop Duties
12	—	Use Service and Flat-Rate Manuals
B		**MAINTAINING AND REPAIRING AIR INDUCTION SYSTEMS**
01	2	Describe the Operation of the Air Induction Systems in Cummins and Detroit Diesel Engines
02	1	Service an Air Intake Manifold
03	2	Service a Dry-Type Air Cleaner and Precleaner
04	2	Service an Oil Bath Air Cleaner
05	2	Remove and Replace a Detroit Diesel Blower
06	2	Recondition a Detroit Diesel Blower
07	18	Troubleshoot, Disassemble, and Assemble a Turbocharger

Task	Hours	
C		MAINTAINING AND REPAIRING COOLING SYSTEMS
01	4	Service Fan Belts
02	2	Test Radiator Coolant
03	2	Replace Radiator Hoses
04	4	Service a Water Filter on a Detroit Diesel Engine
05	8	Test and Replace a Thermostat on a Detroit Diesel Engine
06	2	Flush and Clean a Radiator and Block
07	10	Clean and Install a Radiator
D		MAINTAINING AND REPAIRING FUEL SYSTEMS
01	2	Describe the Operation of a Detroit Diesel Fuel System
02	15	Rebuild a Detroit Diesel Fuel Injector
03	10	Rebuild a Detroit Diesel Governor
04	10	Rebuild a Detroit Diesel Fuel Pump
05	2	Describe the Operation of a Cummins Fuel System
06	—	Rebuild a Cummins Fuel Injector
07	20	Rebuild and Test a Cummins AFC Fuel Injection Pump and Governor
08	—	Rebuild and Test a Cummins PT Fuel Pump and Governor
09	—	Describe the Operation of a Caterpillar Fuel System
10	—	Rebuild a Caterpillar Pencil Injector
11	—	Rebuild a Caterpillar Fuel Injection Pump
12	—	Describe the Operation of a United Technologies Diesel Fuel System
13	—	Rebuild United Technologies Diesel Fuel Injection Nozzles
14	—	Rebuild a United Technologies Diesel Fuel Injection Pump
15	—	Describe the Operation of the Stanadyne Diesel Fuel System
16	—	Field Service a Stanadyne Diesel Fuel System

Task	Hours	Heavy Duty Truck and Bus Mechanics
E		**MAINTAINING AND REPAIRING LUBRICATION SYSTEMS**
01	2	Describe the Lubrication System and Check the Crankcase Level of Selected Diesel Engines
02	8	Change Oil Filters and Engine Lube Oil
03	4	Replace Oil Lines
04	10	Service Oil Coolers
05	8	Service a Detroit Diesel Oil Pump
06	6	Service a Detroit Diesel Oil Pressure Regulator
07	8	Service a Cummins Oil Pump
F		**PERFORMING ENGINE TUNE-UPS**
01	7	Adjust the Exhaust Valve Clearance on a Detroit Diesel Engine
02	7	Time Fuel Injectors on a Detroit Diesel Engine
03	7	Adjust the Governor Gap on a Detroit Diesel Engine
04	12	Position Injector Rack Control Levers on a Detroit Diesel Engine
05	2	Adjust the Throttle Booster Spring on a Variable Speed Governor
06	6	Perform Compression Tests
07	2	Replace Fuel Filters
08	12	Adjust the Valve Clearance and the Injectors on a Cummins Engine
09	3	Identify Diesel Engine Cold Weather Starting Procedures
10	—	Install and Maintain Engine Brakes
11	—	Perform a Tune-Up on a Caterpillar Diesel Engine
12	—	Perform a Tune-Up on a Mack Diesel Engine

Task	Hours	
G		MAINTAINING AND REPAIRING ENGINE ELECTRICAL SYSTEMS
01	3	Service a Battery
02	3	Perform Ohmmeter, Ammeter, and Voltmeter Tests
03	12	Diagnose the Causes of Alternator Problems and Repair an Alternator
04	12	Overhaul and Test a Starting Motor
05	8	Install Batteries on a Series-Parallel System
06	10	Test and Replace Various Electrical Panel Gauges and Sending Units
H		REBUILDING CYLINDER HEADS
01	5	Vacuum Test a Cylinder Head
02	25	Recondition a Cylinder Head
I		MAINTAINING DIESEL ENGINES IN FRAME
01	10	Identify Principles of the Two-Cycle Engine
02	10	Identify Principles of the Four-Cycle Engine
03	—	Remove and Replace a Cylinder Head and Gasket
04	—	Remove and Install an Oil Pan
05	—	Remove and Replace the Piston and Connecting Rod Assemblies
06	—	Replace a Detroit Diesel Cross-head Type Piston
07	—	Replace Detroit Diesel Trunk-Type Pistons
08	—	Inspect and Assemble Cummins Pistons
09	10	Replace Detroit Diesel Cylinder Liners
10	10	Replace Cummins Cylinder Liners
11	10	Replace Crankshaft Main Bearings

Task	Hours	
J		OVERHAULING DIESEL ENGINES
01	4	Mount a Diesel Engine on an Engine Rebuild Stand
02	87	Perform an Overhaul on a Cummins Diesel Engine
03	86	Perform an Overhaul on a Detroit Diesel Engine
04	—	Perform an Overhaul on a Caterpillar Diesel Engine
05	—	Perform an Overhaul on a Mack Diesel Engine
06	25	Perform Dynamometer Tests
K		TROUBLESHOOTING ENGINE COMPLAINTS
01	15	Diagnose the Causes of Engine Failure
02	15	Locate the Causes of Engine Knock
03	10	Locate Engine Misfire
04	15	Diagnose the Causes of High Oil Consumption
05	15	Diagnose the Causes of Low Oil Pressure
06	15	Diagnose the Causes of Low Power
07	10	Diagnose the Causes of Different Types of Smoke
08	6	Perform Water and Mercury Monometer Tests on a Detroit Diesel Engine

Task	Hours	Heavy Duty Truck and Bus Mechanics
L		MAINTAINING AND REPAIRING ELECTRICAL SYSTEMS
01	6	Diagram Simple Lighting Circuits
02	7	Make Up Test Leads
03	11	Repair Wiring Harness Under Dash
04	5	Replace an Ignition Switch
05	8	Repair Defective Electric Horn System
06	11	Repair Turn Signal and Brake Lights
07	15	Repair Heater Motor
08	—	Replace Tractor Trailer Light Cord
M		MAINTAINING GAS ENGINES
01	10	Give Theory of Ignition Systems
02	8	Repair Ignition Malfunctions
03	5	Check All Cylinder Compression Pressures
04	22	Perform an Engine Tune-Up
05	15	Repair Carburetor
06	35	Diagnose the Mechanical Condition of an Engine

Task	Hours	
N		MAINTAINING TRANSMISSIONS
01	—	Describe Theory of Transmissions
02	—	Identify Causes of Gear and Bearing Failure
03	—	Use Pullers and Pressing Equipment
04	10	Repair Defective Air Shift Mechanism
05	8	Adjust Transmission Mounts
06	—	Remove and Replace Transmission
07	15	Overhaul Spicer Five-Speed Transmission
08	25	Overhaul Twin Countershaft Transmission
09	18	Overhaul Range Section
10	8	Repair Defective Shift Tower and Rails
11	—	Service Automatic Transmissions
12	40	Overhaul Automatic Transmissions
O		MAINTAINING CLUTCHES
01	--	Describe Theory of Clutch Principles
02	8	Adjust Push or Pull Type Clutch
03	8	Repair Defective Clutch Release Assembly
04	16	Replace Single Disc Clutch Assembly
05	25	Replace Double Disc Clutch Assembly

Task	Hours	
P		REPAIRING DIFFERENTIALS AND DRIVE LINES
01	—	Explain Operation of Differentials
02	—	Recondition Differentials
03	—	Explain the Operation of Two-Speed Differentials
04	—	Recondition Two-Speed Differentials
05	30	Recondition Gear Carrier Assembly
06	30	Recondition Power Divider
07	10	Repair Two-Speed Axle Malfunctions
08	10	Replace Universal Joints
09	20	Repair Faulty Drive Line Angles
Q		MAINTAINING HYDRAULIC BRAKES
01	—	Identify Brake Components
02	—	Repair and Maintain Brakes
03	—	Turn Drums and Rotors
04	14	Adjust Hydraulic Brakes
05	8	Repack Wheel Bearings
06	15	Service Master Cylinder
07	10	Service Hydrovac Unit
08	30	Perform a Drum or Disc Brake Job

Task	Hours	Heavy Duty Truck and Bus Mechanics
R		MAINTAINING AIR BRAKES
01	—	Adjust Cam and Roller Brakes
02	—	Adjust Wedge Brake Components
03	35	Perform a Wedge-Type Brake Job
04	35	Perform a Cam and Roller Brake Job
05	8	Remove and Replace Slack Adjuster
06	10	Remove and Replace Faulty Brake Chamber
S		MAINTAINING AIR SYSTEMS
01	—	Explain the Operation of Air Systems
02	15	Replace Various Air System Valves
03	5	Replace Air Governor
04	25	Repair Air Compressor
05	—	Repair Air Starter
T		REPAIRING FRONT AXLES, STEERING, AND WHEEL ALIGNMENT
01	18	Repair Steering Box Assembly
02	10	Replace Front Spring(s)
03	20	Replace King Pins
04	6	Replace Front Shock Absorbers
05	10	Repair Power Steering Problems
06	—	Align a Front End

Task	Hours	U — WELDING
01	3	Set Up Portable or Stationary Oxy-Fuel Equipment
02	—	Cut Mild Steel Using Oxyacetylene Equipment
03	5	Deposit Weld Beads Using Oxyacetylene Equipment
04	—	Weld Mild Steel Using Oxyacetylene Equipment
05	—	Braze with the Oxyacetylene Equipment
06	—	Run Short Beads Using Arc Welding Equipment
07	—	Build a Pad of Beads, Flat Position
08	—	Weld Single and Multiple Pass Lap Joints, Flat Position
09	—	Weld "Tee" Joints
10	—	Weld Outside Corner Joints
11	—	Weld Butt Joints

Task	Hours	V — OVERHAULING AND MAINTAINING BASIC HYDRAULIC SYSTEMS
01	—	Explain the Fundamentals of Hydraulic Systems
02	—	Interpret Hydraulics Schematics
03	—	Test and Diagnose a Hydraulic System
04	—	Service a Hydraulic System
05	—	Recondition Lines, Fittings, and Couplers

Task	Hours	Heavy Duty Truck and Bus Mechanics
W		MAINTAINING CHASSIS
01	—	Repair or Replace Fifth Wheel
02	—	Repair or Replace Trailer Dollies
03	—	Repair Speedometer or Tachometer Malfunctions
04	—	Diagnose and Repair Various Door, Latch, and Window Malfunctions
05	—	Diagnose and Repair Various Windshield Wiper and Washer Malfunctions
06	—	Perform "A" Service on Tractor Trailor
07	—	Replace or Adjust Torque Arms
08	—	Identify Air Conditioning System Component Names and Functions
09	—	Perform a Preseason Inspection of the Air Conditioning System
10	—	Test, Evacuate, and Charge Air Conditioning System